Using the Web-based Map for the Environmental Data Management System

Idaho Department of Water Resources

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Geographic Information Systems – Internet Mapping
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Table of Contents

Instructions

Welcome

The Environmental Data Management System (EDMS) is a central database designed to house Idaho ground water quality data and well characteristics from several state agencies and provide for easy access via the internet. An explanation of the EDMS can be found on the Idaho Department of Water Resources web-site at http://www.idwr.idaho.gov/WaterInformation/EDMS/default.htm. This web-based, interactive map facilitates exploration and retrieval of those data.

You will be able to select wells and water quality characteristics, individually or by class, and view or download water quality test results for the records retrieved for the parameters you entered. It is possible that there will be no test results for a well even though it is a part of the EDMS. Due to the possibility of selecting a large number of wells and/or water quality characteristics, the results from your query may be a subset of the actual records available. You will receive a warning to change your parameters to narrow the candidates returned for your query. In other words, this application restricts queries so that you cannot download the entire database.

This web mapping application does not require any GIS experience or any software other than your internet browser. As with all of the information provided by the department, via the internet, you will be asked to acknowledge and agree to the site's ***Conditions of Use.***

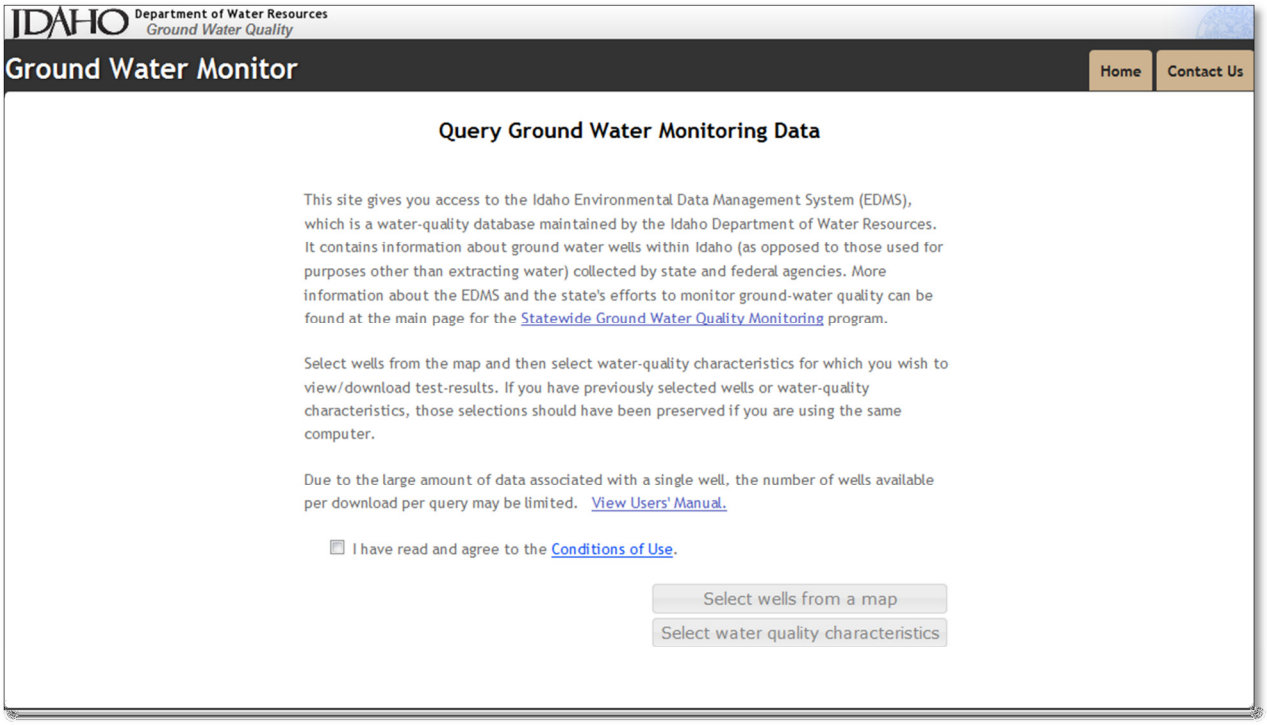
Conditions of Use

> ***The Idaho Department of Water Resources is maintaining this web site as a public service. The Idaho Department of Water Resources strives to ensure that all technical data and other information made available to the public through this web site is accurate, complete and in conformance with the Idaho Public Records Act. Neither the Department of Water Resources nor the State of Idaho, however, assumes any legal responsibility for the accuracy or completeness of the information contained on this site.***
>
> ***Persons using information from this site for official purposes, or other purposes, for which accuracy and completeness are required, are hereby notified that they should first verify the information with the public records or other primary sources from which the information was obtained.***

Please see ***Appendix C – Glossary***, at the end of this document, for an explanation of the GIS and internet mapping terms used in this document.

Getting Started

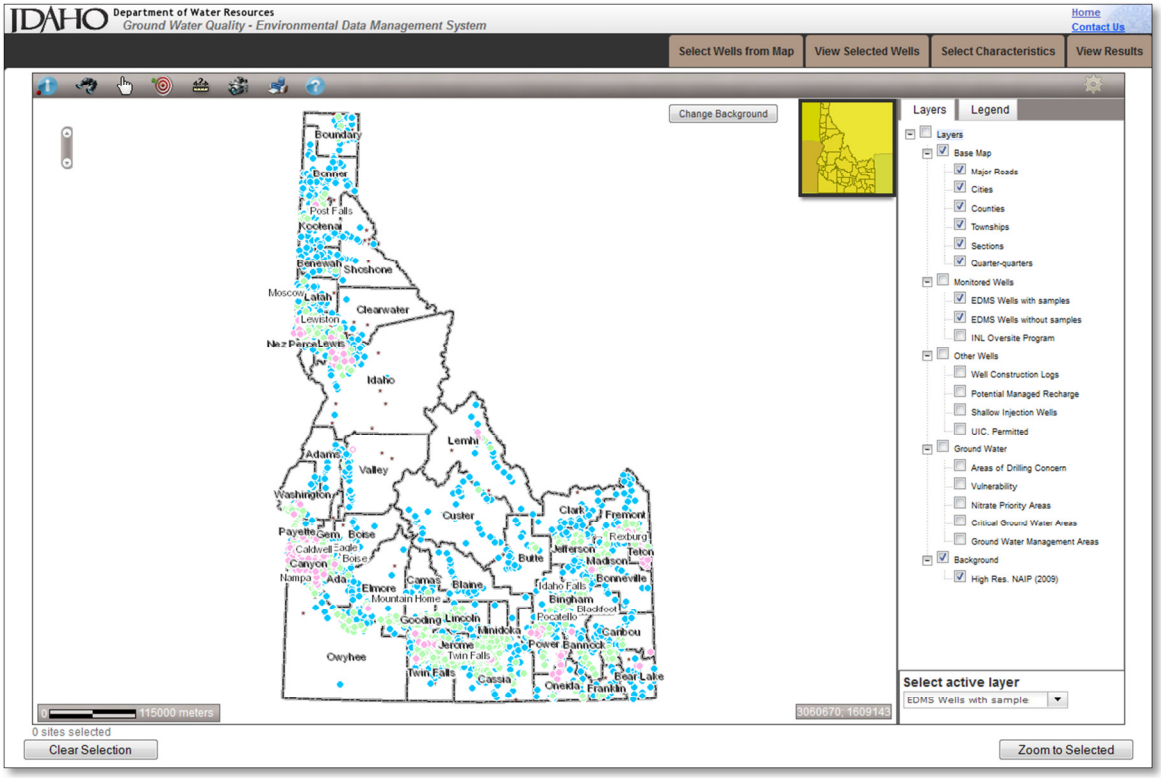
Use your browser to navigate to the following address: http://www.idwr.idaho.gov/Groundwater/EDMS
The web-page should look like this:



Once you have agreed to the conditions of use, the buttons at the bottom of the page will be enabled so that you use the application. If you have not previously used the application, click the "Select wells from a map" button. When you use this application it stores the wells and water quality characteristics for which you chose to view details.

Using the Map

On first use, the map will show the entire state of Idaho.

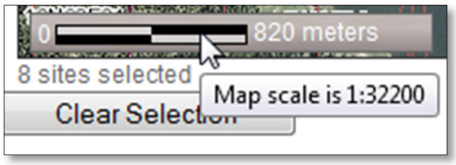


You must use the navigation tools to position the wells you wish to select in the center of the on-screen map and magnify it in order to see roads and field boundaries that help you accurately draw your new waterway, if necessary. You can display the entire state of Idaho within the on-screen map or magnify the view so that you can see just a few acres.

The terms "zoom in" and "zoom out" mean to view a smaller portion of the earth or a larger portion, respectively. Displays showing the size and location of the area shown on the map. The map-scale and map-coordinate indicators are located at the lower corners of the map.

Map Scale Indicator

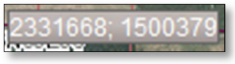
This example shows (appoximately) how many meters there are in one map inch.



Hover over the scalebar to display the map scale recipricol.

Map Coordinate Indicator

The coordinate indicator displays the position of the mouse cursor on the map. The default coordinates are IDTM NAD83.



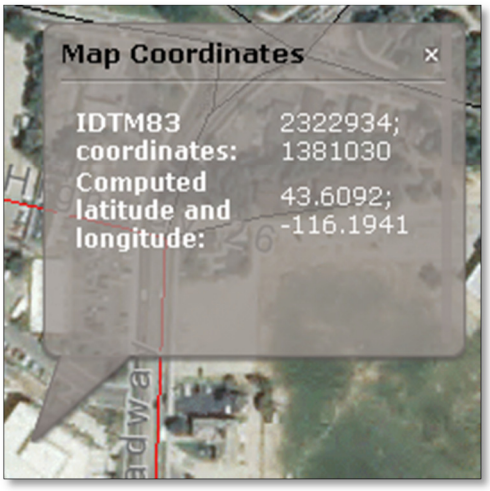
The units used to display the scale or coordinates can be changed using the ***Options*** menu; see the section of this documentation entitled ***Options Menu.***

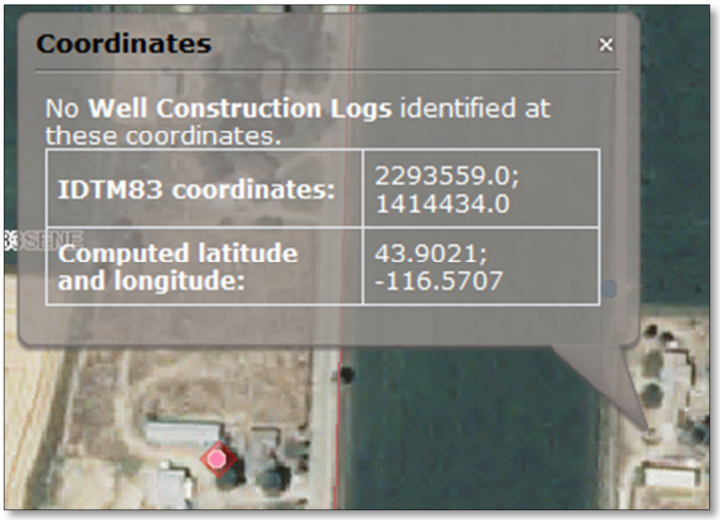
Displaying Coordinates of a Point

The IDTM coordinates are shown in the lower, right corner of the map, as explained in the previous section. You can click on any point on the map to display the coordinates of that point.*

If you do not have an *active layer* selected you will see the IDTM coordinates and the latitude and longitude.

* The only time you won't see this (or similar) display is when you have clicked on a *feature* belonging to the *active layer*. In that case, you will see the table of records for data related to that *feature* (as shown in the discusson on the *identify tool*).





If you have set an *active layer* to identify features on the map, but click a point where no features from the active layer are present you will see an error message and the coordinates.

You would get a similar screen if, for example, an *EDMS Wells with samples* feature (for which there is not well driller's report) was clicked but the *Well Construction Logs* layer was active.

Navigation Tools

Within the interactive map you can display the entire state of Idaho or magnify the view so that you can see just a few acres or city blocks. The tools used to resize and reposition the on-screen map are called navigation tools. This application has no visible navigation controls except for the *zoom slider, which is positioned on the map at the upper, left-hand corner.*

Zoom Slider: Used to double the scale of the map or reduce it by half. Click on the upper button to see more detail. Click on the bottom button to view a larger area.

Resizing the Map

Zoom In – use any of the following methods:

- Click the upper arrow on the *Zoom Slider.*
- Press the *plus sign* (+) on the keypad.
- Roll mouse-wheel forward.
- Hold down the ***Shift*** key, click on the map and hold the button down while dragging the mouse cursor to outline the area you wish to see.

Zoom Out – use any of the following methods:

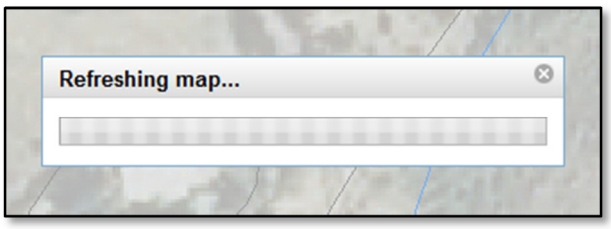
- Click the lower arrow on the *Zoom Slider.*
- Press the *minus sign* (-) on the keypad.
- Roll mouse-wheel backward.
- Hold down the ***Ctrl*** and ***Shift*** keys, click on the map and hold the button down while dragging the mouse cursor to outline an area of the map. If you cover a large area, you will be zoomed out a little bit; if you cover a small area you will be zoomed out a lot.

Moving the Map

Pan tool: click on the map and drag it to a new position. Apple Mac users can use the ***Command*** key in the same manner that ***Ctrl*** key is used on Windows PCs.

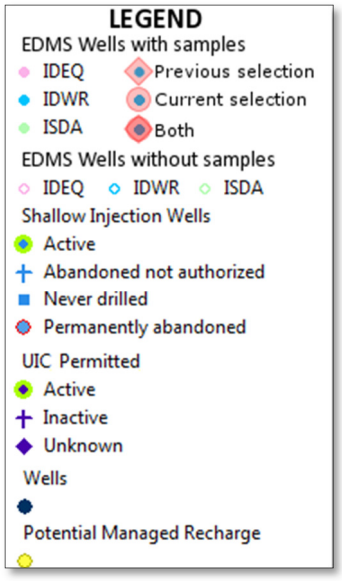
The Progress Bar

When you use any of the navigation tools Although not a "tool," the progress bar appears when you resize the map or perform queries and tells you when the application is waiting for information. If it remains after the map has redrawn, you can close it by clicking on the "X" in the upper, right corner of the window.



The Legend

The legend displays a list of all of the layers and the graphics or symbols which represent them. This legend includes the graphics used to display the current state of well-selection. Those sites previously selected, if any, will be highlighted with a diamond. Those which have just been selected using the *select sites* tool (explained below) will be represented with a circle or a circle overlaying the previously rendered diamond (the well was previously selected and is part of the current selection, which might represent a well you wish to remove from the query set).



The Toolbar

The toolbar, located above the upper, left-hand corner of the map, holds all of the tools you need to find, select and view details for features from the various layers on the map.

Identify

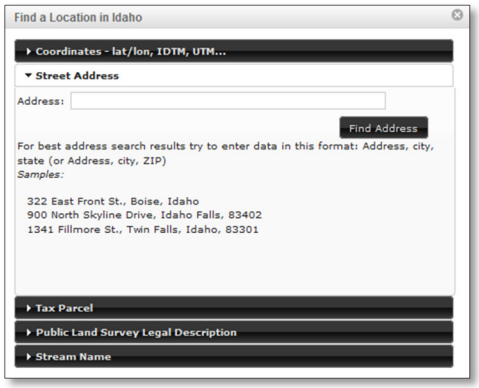
The *identify* tool is active when you start the application. When it is active (indicated by the small dot at the lower, left corner of the icon), click on any point on the map to display the attributes of the record, from the active layer, at that point. As discussed in the section entitled *Displaying Coordinates of a Point, i*f you click on the map away from any features, the IDTM coordinates and latitude/longitude for that point will be displayed in a pop-up window.

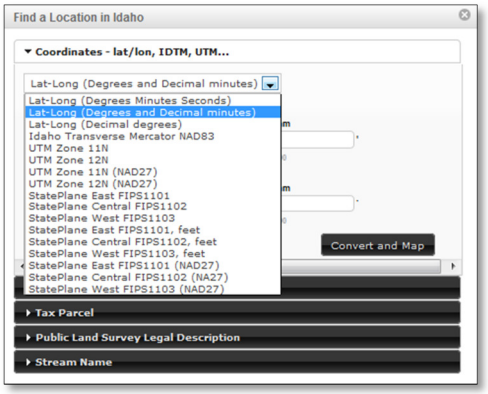
Select Sites

The *select sites* tool is used to query the EDMS database. It is a query tool which operates exclusively on the layer named *EDMS Wells with samples* – the tooltip says *Select EDMS Wells...* This tool allows you to select well-sites for which water quality test-results can be viewed and downloaded. It is the only tool coupled to the query-pages – tabs named **View Selected Wells**, **Select Characteristics** and **View Results**. An explanation of how to use this tool, as well as the pages accessed through those tabs, see the section entitled ***Selecting Wells***.

Find by…

The *find* tool is used to "find" a location in Idaho using various methods, including entering northing/easting pairs in several coordinate systems.





You may zoom into a portion of Idaho using any of the following options:

- Map Coordinates, such as latitude/longitude, IDTM, UTM, etc.
- Street Address (as shown above)
- Tax Parcel number
- Public Land Survey (Legal description)
- Stream name

Other Tools

Search

The *search* tool allows you to find features in a layer by searching selected fields for user-specified text or by using geometry (point, line or polygon) to highlight all features from a given layer. The results of the search are presented in a table that allows you to see some of the key attributes of the selected features. It is discussed in the section entitled ***Appendix A – Searching for Features***.

Measure

The *measure* tool is discussed in the section entitled ***Appendix B – Measuring Distances***.

Capture

The *capture* tool allows you to save a picture of the current map. This is useful for making electronic "slide presentations."

Print

The *print* tool creates an 8 ½" x 11" map, complete with legend, scale-bar, creation date and annotation. For best results, you must set your browser to print in landscape mode.

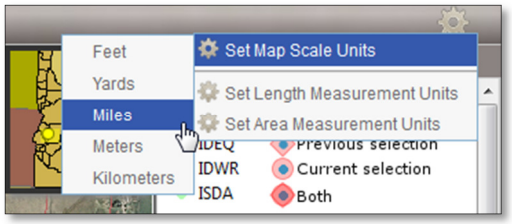
Help

The *help* tool displays this document in another browser window.

The Options Menu

The options menu allows you to change the units displayed on the map for the following:

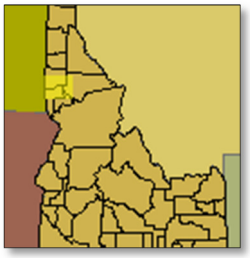
- scalebar
- length measurements
- area measurements
- coordinate display



The Overview Map

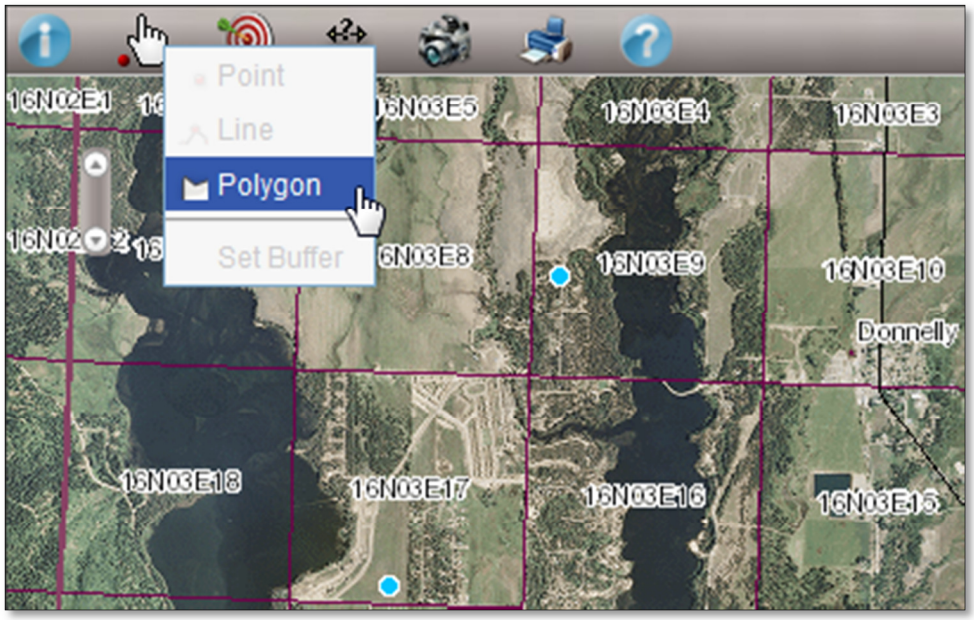
The overview map shows the portion of Idaho you are viewing in the main map window. Normally, you will be viewing a very small area which will be shown as a point on the overview map.

If the area you are viewing is quite large it may be displayed as a rectangle on the overview map.



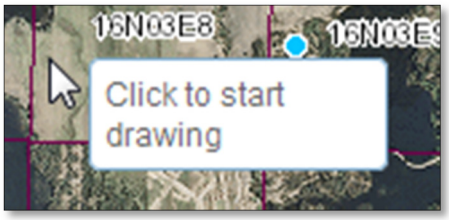
Selecting Wells

In order request information from the EDMS, you must select the wells on which to query. Click on the ***Select Sites*** tool, located on the toolbar, then click on *Polygon* to activate the polygon selection tool.



Only the ***Polygon*** selection tool is currently available for this application.

When you move the mouse over the map, you will see the tooltip "Click to start drawing." If you do not see that tooltip, select the polygon tool again.

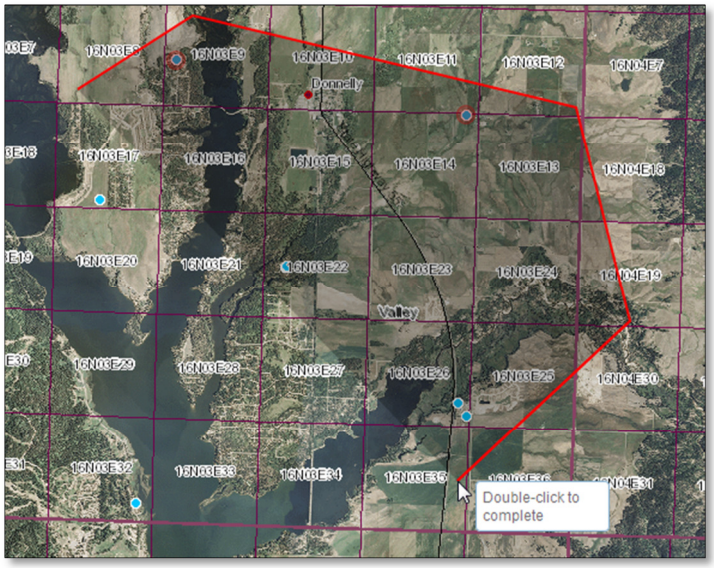


Once you have clicked the initial point of the polygon, the tooltip will change to "Click to continue drawing."

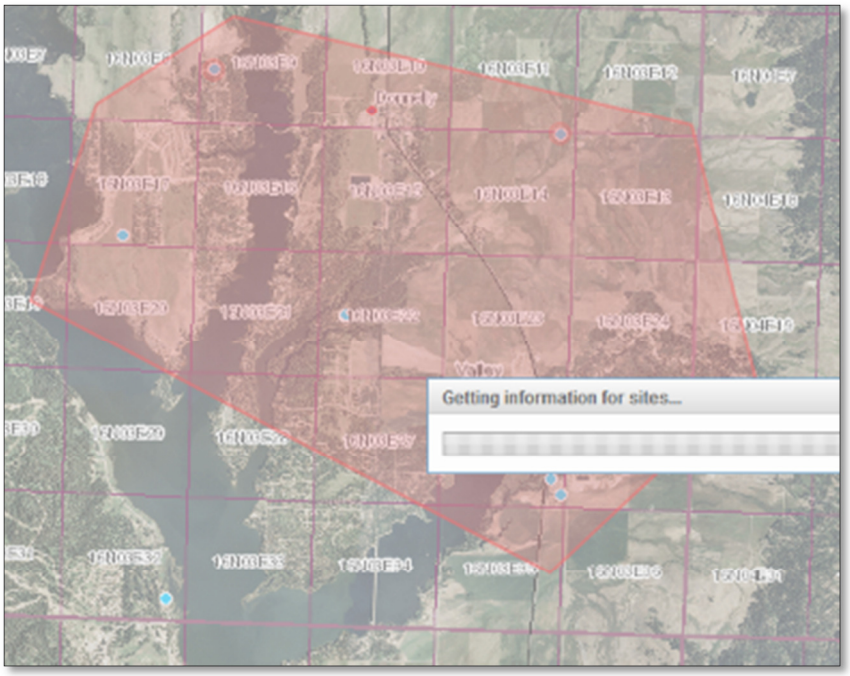
Finally, you will see the "Double-click to complete" tooltip as you add vertices to the polygon.

Double-click the mouse to finish selecting wells.

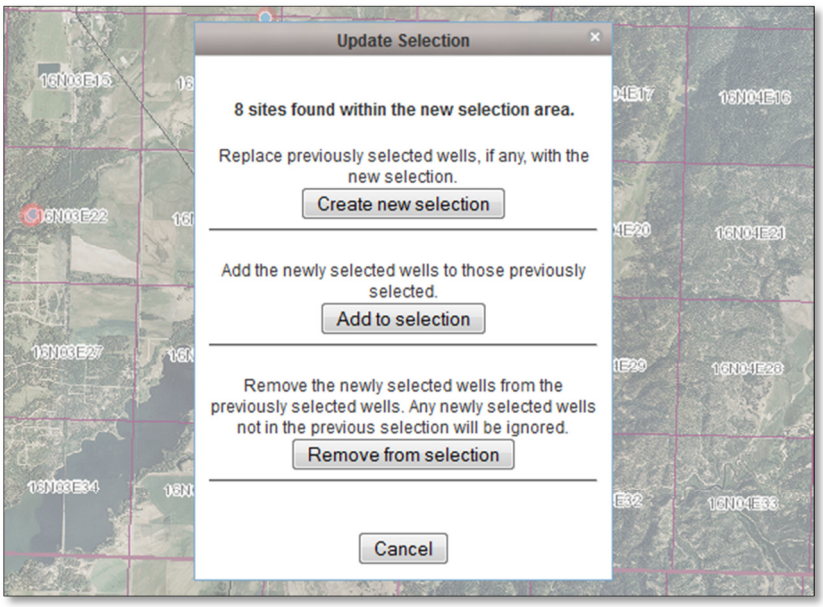
Note: If you see the progress bar before you have finished drawing the polygon, wait for it to disappear and continue drawing.



The map will be overlayed with a shadow to indicate that you cannot interact with it. You will see a progress bar and the message "Getting information for sites…"



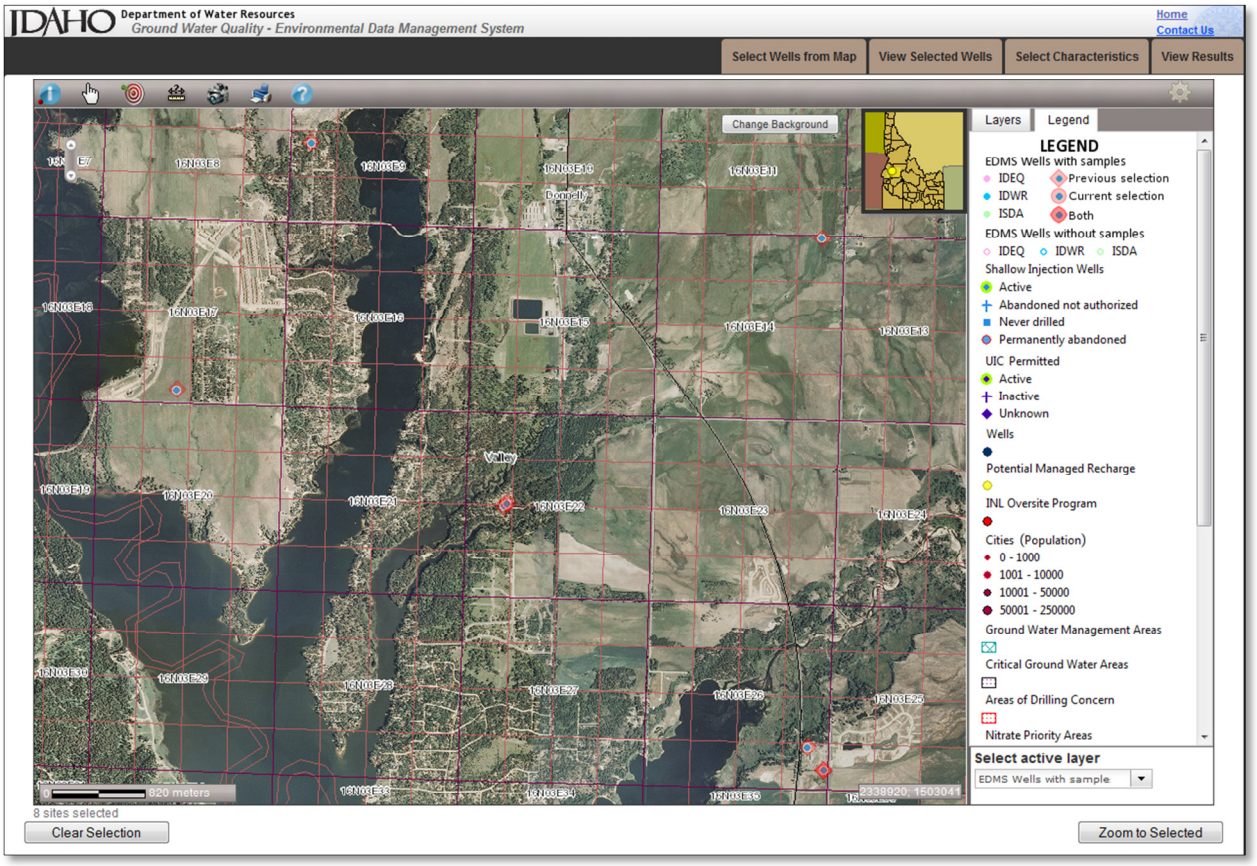
Once the wells have been located, the way in which the symbols representing the wells are drawn will change – refer to the documentation on the Legend to see details about the symbols. The Update Selection menu will pop up. Note that the number of sites selected is not yet reflected in the number below the map.



Even though you have chosen wells using the polygon selection tool, you have not modified the set of wells on which queries will be based.

Make your selection from the ***Update Selection*** menu in order to modify the set.

The number of sites selected will be reflected in the number below the map. In the example below, the user chose to ***Create new selection***.



You always have the option of clearing the selected wells using the button located beneath the lower, left corner of the map.

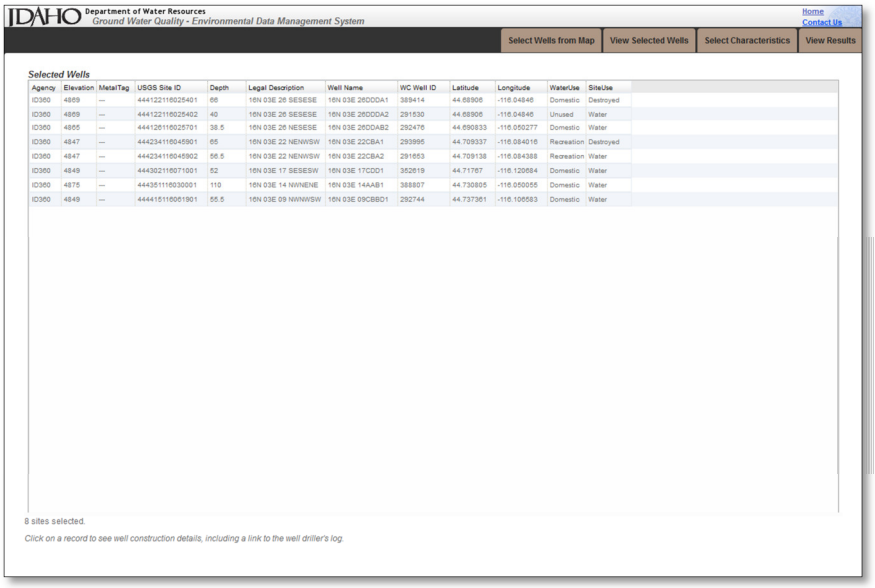
If, during map navigation, you can no longer find the wells you have selected, use the ***Zoom to Selected*** button to re-center the map on your selection.

Search for a Well by ID or Name

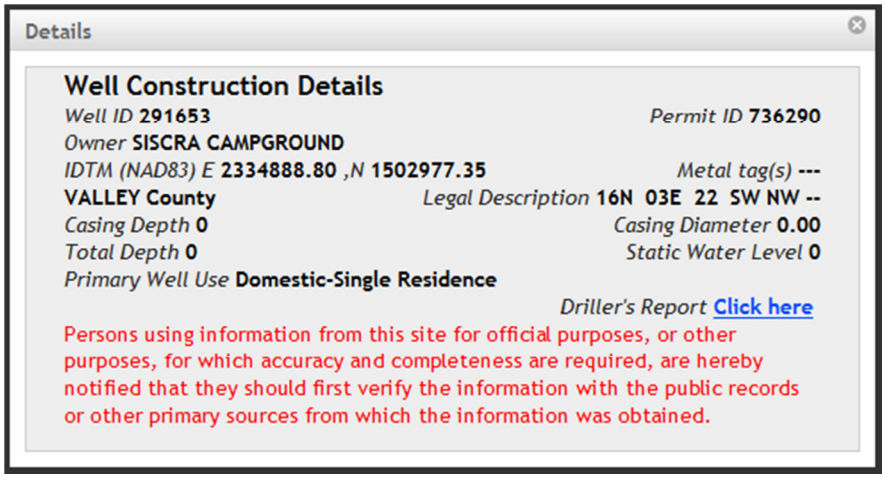
Use the *search* tool to find a specific well-site by EDMS Well ID, Agency Well, Well Name, Well Construction ID, USGS or Site ID. The *search* tool is discussed in the section entitled ***Appendix A – Searching for Features***.

Displaying the Table of Well Attributes

Click the ***View Selected Wells*** tab, above the toolbar, to move to the page that displays details, stored in the EDMS database, about the the wells you selected.

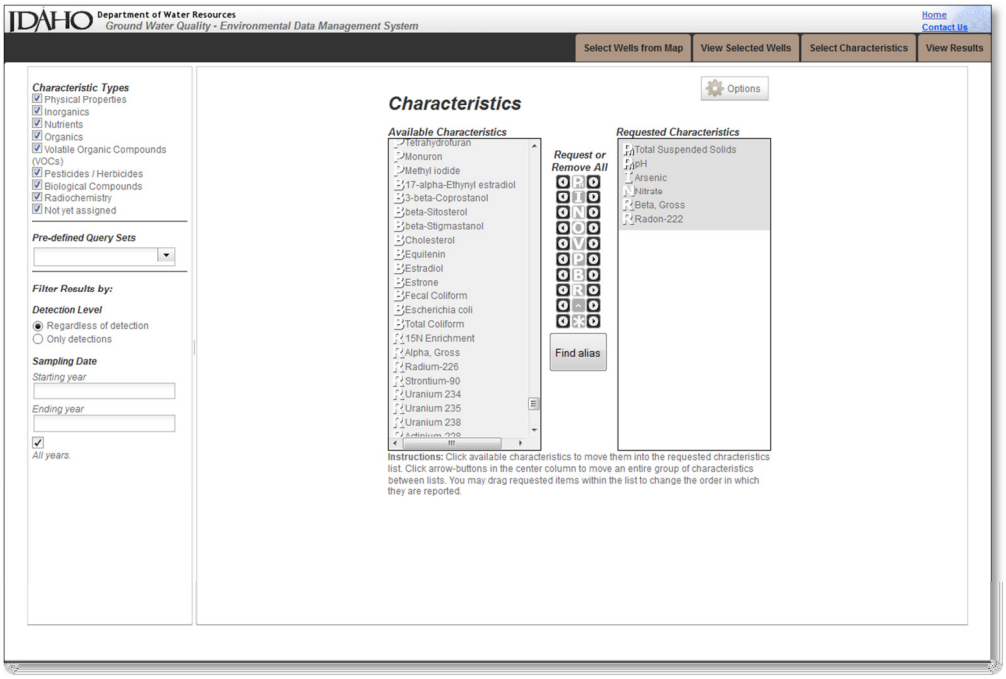


You may click on a row, to see the information stored in the IDWR's well-construction database for that site. That display includes a link to the image of the Well Driller's well log, if one exists. Note, if the *WC Well ID* field shows "---" no driller's report exists for that well.



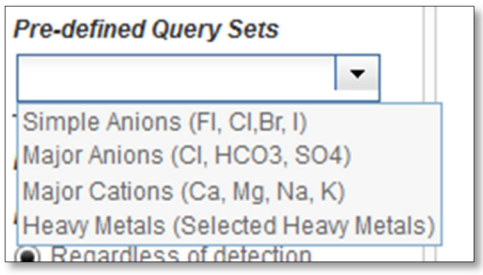
Selecting Water Quality Characteristics

Click the ***Select Characteristics*** tab, above the toolbar, to move to the page that allows you to select the water quality characteristics for which you wish to see results. In the example below, six characteristics were selected. We are telling the application that we wish to see all results, without regard to sample date or whether there were detections. If there are water quality categories you are not interested in, you may narrow the list of ***Available Characteristics*** by removing the check-marks from any of the ***Characteristic Types***.



Selecting Characteristics by Group

This application provides pre-defined query sets to allow the user to request sets of characteristics which are commonly grouped together for analysis.

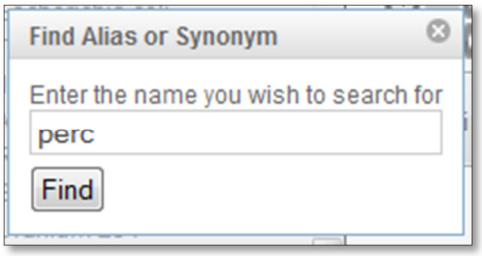


Add one of these sets to your request by selecting it from the drop-down list. You may add as many sets as you wish.

Selecting Characteristics by Alias

If you cannot find an item in the list of available characteristics you can search for it by common name, synonym, alias, CAS registry number or STORET parameter code.

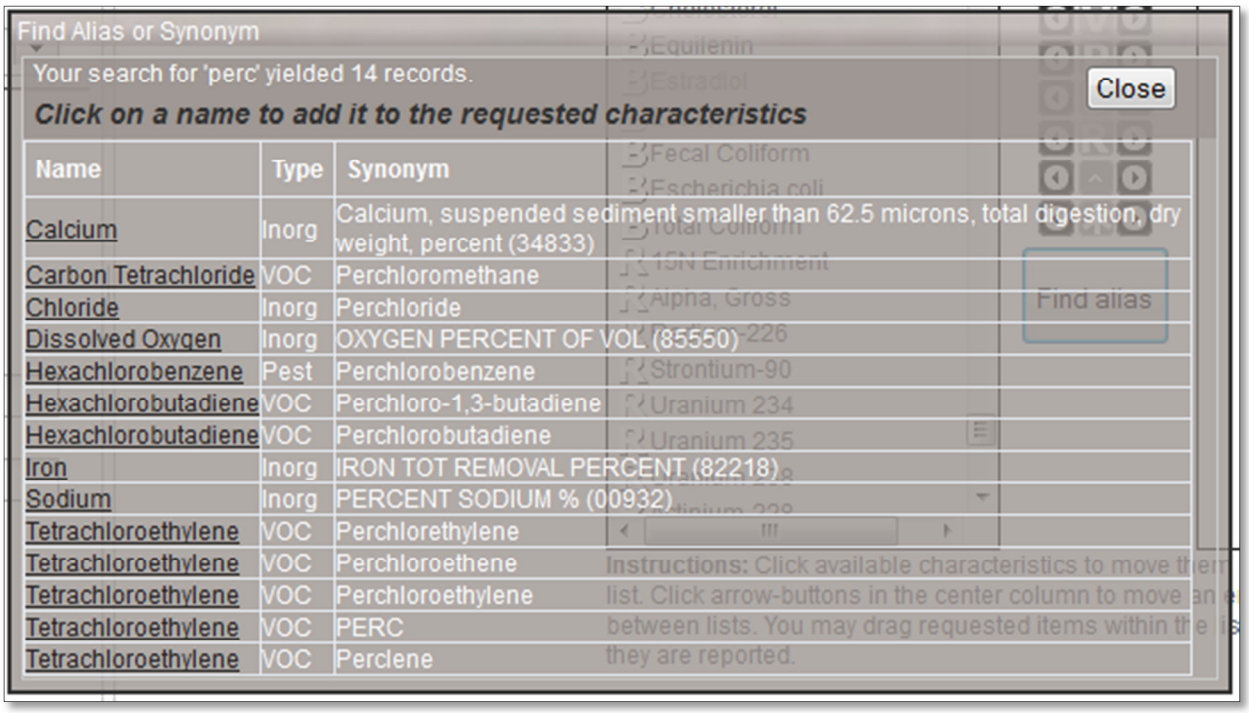
To select by alias, click the ***Find alias*** button.



Enter the search string in the pop-up window and click the ***Find*** button.

You will see a new window with all of the records containing the search-string. Since units and descriptive text are searched, the query may return unwanted or unexpected results.

In the case of the 'perc' example, the word 'percent' adds unintended records.

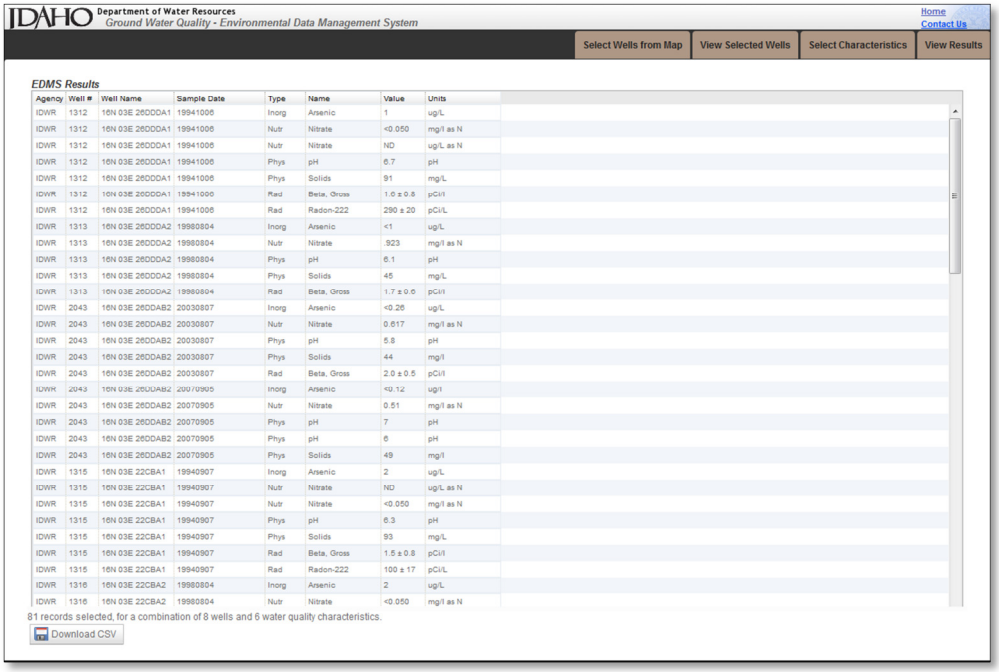


Name	Type	Synonym
Calcium	Inorg	Calcium, suspended sediment smaller than 62.5 microns, total digestion, dry weight, percent (34833)
Carbon Tetrachloride	VOC	Perchloromethane
Chloride	Inorg	Perchloride
Dissolved Oxygen	Inorg	OXYGEN PERCENT OF VOL (85550)
Hexachlorobenzene	Pest	Perchlorobenzene
Hexachlorobutadiene	VOC	Perchloro-1,3-butadiene
Hexachlorobutadiene	VOC	Perchlorobutadiene
Iron	Inorg	IRON TOT REMOVAL PERCENT (82218)
Sodium	Inorg	PERCENT SODIUM % (00932)
Tetrachloroethylene	VOC	Perchlorethylene
Tetrachloroethylene	VOC	Perchloroethene
Tetrachloroethylene	VOC	Perchloroethylene
Tetrachloroethylene	VOC	PERC
Tetrachloroethylene	VOC	Perclene

Click the name of the characteristic you wish to add to your request. The characteristic will be added to the ***Requested Characteristics*** list (and in the results available for download) as **Tetrachloroethylene**, not **Perchlorethylene**, for example.

Viewing Query Results

Click the ***View Results*** tab, above the toolbar, to move to the page that shows you what you've won! Click on column heading to sort by the values in that column. Note, numeric values will not sort correctly since the columns are formatted as character-strings (to allow inclusion of special characters). Click the Download CSV button to retrieve the records in comma-separated-variables format.



Final Thoughts

Cookies

The information collected from one page to another is stored in local storage on your PC, Mac or hand-held device. You must have cookies enabled in order to use this application. Although you may use the browser's "Back" button to go the previous page, you may cause the application to loose any selections you made on the page you are leaving.

Contacting IDWR

If you have any problems with this application, or have questions not answered by this document, you can contact the IDWR using the information shown below. Please include your telephone number and browser name/version when requesting assisstance. Comments on how to make this application better are welcome, of course.

For comments and questions concerning this application, or any of the IDWR's interactive maps, send an e-mail message to GISInfo@idwr.idaho.gov or call the telephone number shown below:

Idaho Department of Water Resources
The Idaho Water Center
322 East Front Street
PO Box 83720
Boise, Idaho 83720-0098
Phone: (208) 287-4800
Fax: (208) 287-6700

Appendix A – Searching for Features

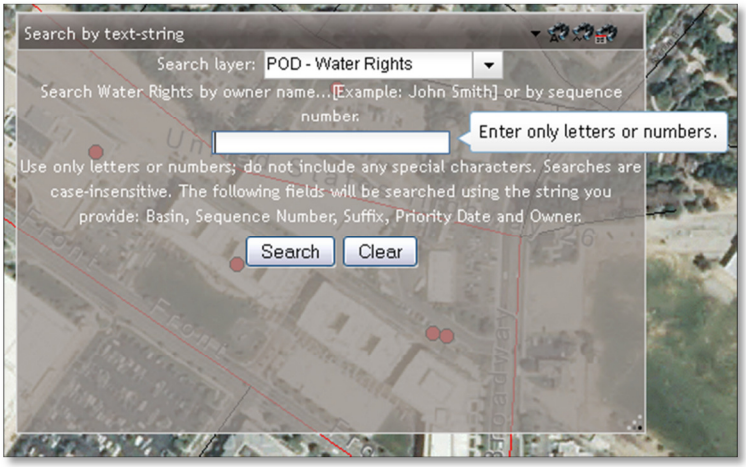
The search tool provides two functions for searching/selecting records and one pane to show the results of that search. Clicking on the *search* tool displays a window which has three modes. Each of those modes is accessible by clicking on the appropriate icon on the title bar:

- **Select by text-string** – find features in a layer by searching selected fields for user-specified text.
- **Select features** – use geometry (point, line or polygon) to select and highlight all features from a given layer.
- **Results** – display a spreadsheet-like grid containing details for all of the records returned from the search.

The layers available to the search tool vary by application. In general, if a GIS layer is present in the application, is currently visible and has been developed by the IDWR, its records can be searched. The examples below use several water rights layers to demonstrate the use of the tools – note that the water rights layers are not available in this application but this set of examples was included because it involves a polygonal layer (should one be added to the application after publication of this document); all of the "queryable," IDWR-maintained layers in this application contain point-data.

Select by Text String

Enter text or numbers without quotation marks or any other punction. All searches are case-insensitive.

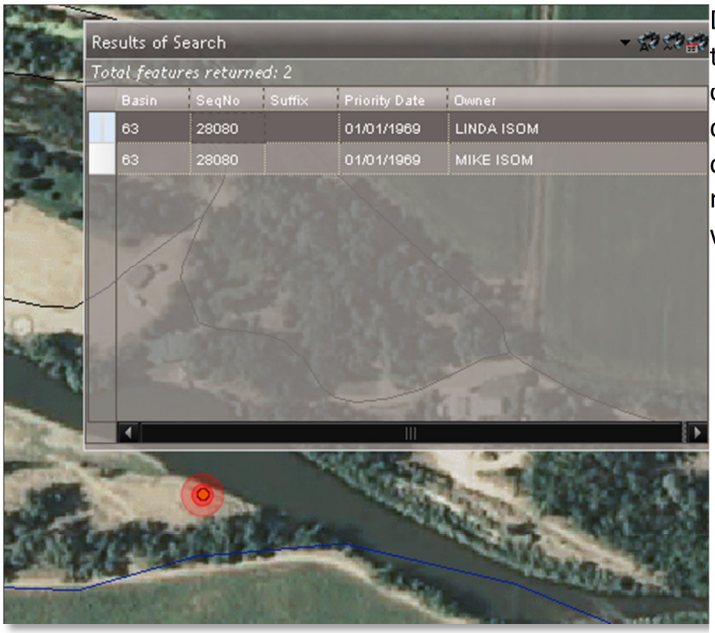


Search by text-string is the default search tool. It is active when you open the search window for the first time. Select a layer to search and then enter (as the tooltip says) the numbers or character string you wish to search for.

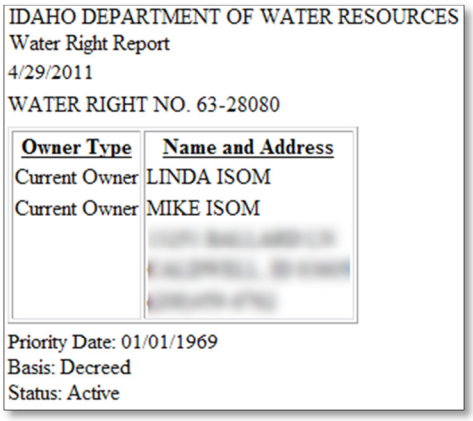
The example and the list of fields which will be searched are specific to the layer selected – in this case, only the Basin, Sequence Number, Suffix, Priority Date and Owner fields will be searched.

Searching for the number **28080** yields two *features* from the POD – Water Rights *layer*. Those *features* are not represented within the current *extent* of the map.

Click on one of the rows in the results grid and the map will be zoomed to, and centered on, the *feature* from that row.



Detailed records are available for many of the layers (all of those associated with well construction logs, for example). If more detailed information is available, double-clicking a row will query the database for more details and display it in a new tab or window:



IDAHO DEPARTMENT OF WATER RESOURCES
Water Right Report
4/29/2011
WATER RIGHT NO. 63-28080

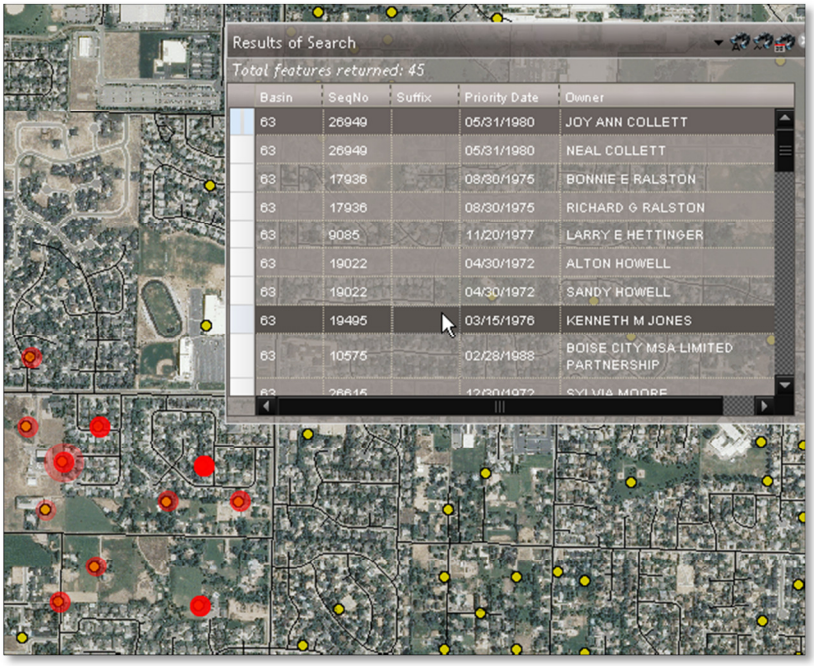
Owner Type	Name and Address
Current Owner	LINDA ISOM
Current Owner	MIKE ISOM

Priority Date: 01/01/1969
Basis: Decreed
Status: Active

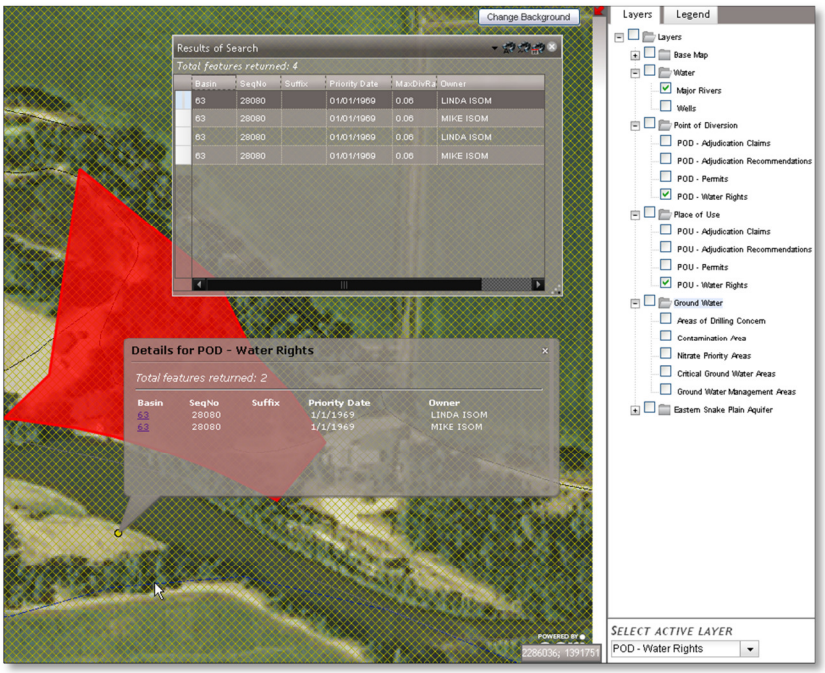
Hovering over a row in the results grid highlights the actual area of use associated with water right 63-28080.

Select Features (by Geometry)

Alternatively, you can select *features* by drawing a polygon around them. This provides grouping, rather than searching, but it does allow you to view the *attributes* for several records at the same time.



Finally, the search layer may be different than the active layer. In the example below the POU – Water Rights layer (the cross-hatched area) covers the entire screen making it impossible to highlight a single place-of-use (POU).

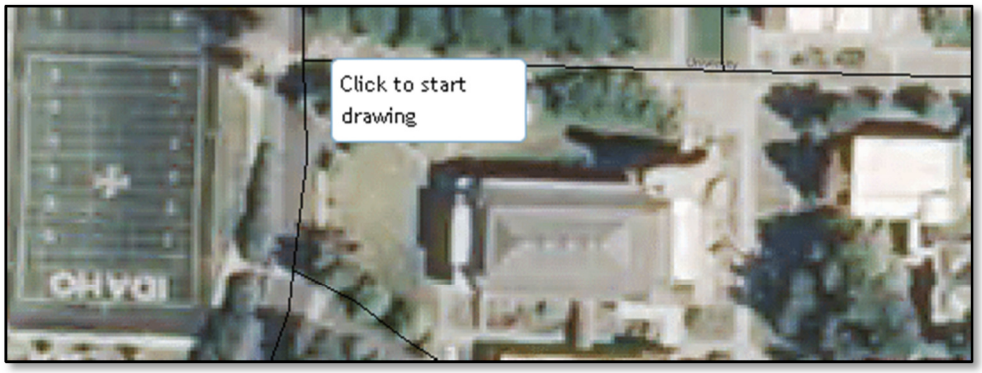


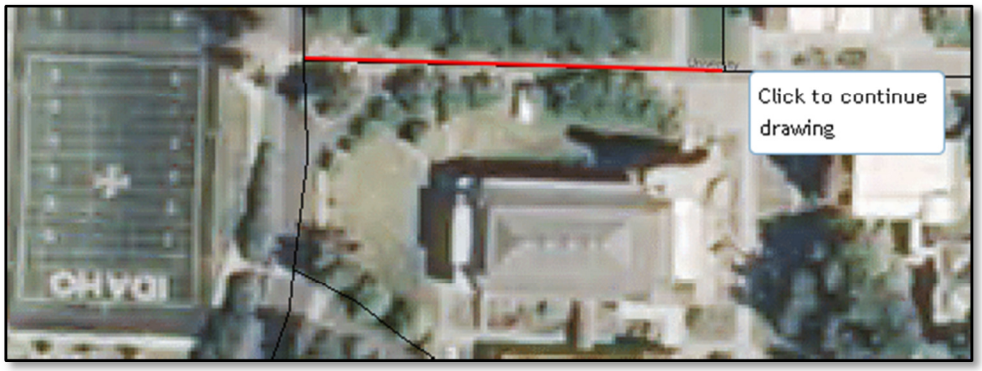
The *identify* tool was used to get the basin and sequence number for the point-of-diversion (POD) for the water right, then the *search* tool was used to find all places of use for that basin-sequence.

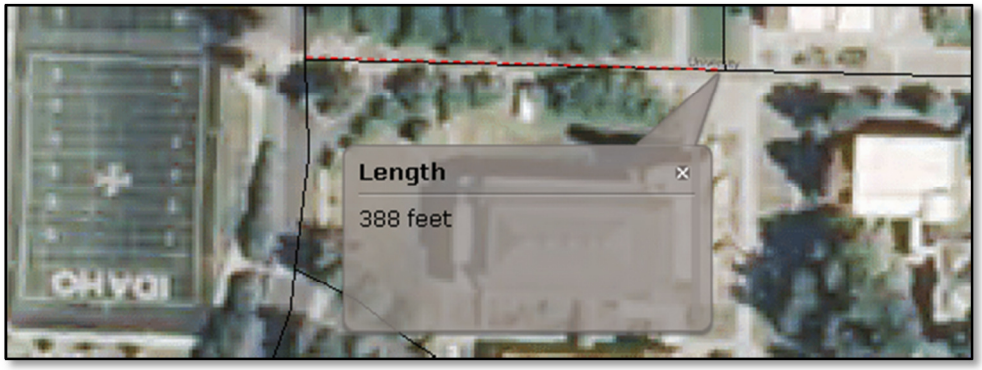
Hovering over a row in the results grid highlights the actual area of use associated with water right 63-28080.

Appendix B – Measuring Distances

Measure distances on the map by clicking the measure tool. Tooltips guide you through the process.







Appendix C – Glossary

The following list of terms is for those of you who are not familiar with internet mapping applications.

General Terminology

GIS – Geographic (or geographical) Information System. The GIS ties IDWR data – wells, water rights, etc. – to locations in Idaho.
Attribute – a characteristic of the data; a value from one of the columns/fields in the database.
Feature – a point, line or polygon that describes the extent of an item in the IDWR's GIS.
Layer – a collection of features of the same type, e.g. streams.
Extent – the scope or limit of the geographical area.
IDTM – Idaho Transverse Mercator is the official coordinate system used to exchange geographic information within the state.

Terms Specific to Using the Map

Map – the portion of the display used to emulate a paper map.
Navigation – the act of sizing or repositioning the content of the interactive map.
Click – press the mouse button (usually the left button). This application does not provide any functionality to "right-clicking."
Drag – press and hold the mouse button while moving the mouse. The only use for this (in this application) is as a short-cut to zoom to a specific portion of the map.
Hover – mouse your mouse cursor over an area of the map, icons or menus in order to see more information about that item.
Rubber-band box – if you use the ***Shift*** and ***Ctrl*** keys while dragging the mouse you will see a rectangular overlay showing the extent of the area which will be operated on. Used for navigation or feature selection.
Zoom in – view a smaller portion of Idaho (magnify).
Zoom out – view a larger portion of Idaho (minify).
Pan – reposition the map by dragging it in any direction.
Tooltip – small text-boxes which become visible when you place your mouse cursor over certain components.
Map scale – the approximate scale of the map, given as a ratio, e.g. 1:24000.